

Title of PBL: Survey and Layout Preparation of new Parking Area of ITM University

Designed by -:

Ashutosh Sharma (B. Tech-CE VIII Sem)

Under the Guidance of

Mr. Farhan Ul Rahman

1. Introduction

As part of the practical learning module, students from the Department of Civil Engineering participated in a live project involving the **centre line layout and reinforcement detailing** for the **extension of the university sports complex**. This project aimed to provide students with essential exposure to field practices related to building layout, structural detailing, and site execution procedures. Through this engagement, students contributed directly to a major infrastructure development project within the campus.

2. Project Description

The project involved two major tasks:

- **Centre Line Layout:** Marking the centre lines of the extended structure on-site based on the approved construction drawings. This step was crucial for guiding excavation, foundation work, and overall alignment of the building.
- **Reinforcement Detailing:** Reviewing structural drawings and assisting in identifying, arranging, and detailing the reinforcement for footings, columns, and beams as per project specifications and site requirements.

Students worked closely under the guidance of faculty members and site engineers to ensure that all activities were conducted with precision and in accordance with engineering standards.

3. Methodology

The project was carried out through the following systematic phases:

- **Study of Architectural and Structural Drawings:**
Students thoroughly studied the provided drawings to understand dimensions, grid lines, and reinforcement specifications.
- **Marking of Centre Lines:**
Using surveying tools such as measuring tapes, levels, chalk lines, and total stations, students marked the centre lines for foundations and columns accurately on the ground.

- **Verification and Cross-Checking:**
All markings were checked for accuracy through triangulation methods and cross measurements to avoid any deviations.
- **Reinforcement Preparation:**
Based on the bar bending schedule (BBS) and structural drawings, students identified various types of steel reinforcement required (e.g., main bars, stirrups, ties) and assisted in cutting, bending, and placing reinforcement as per standard practices.
- **Site Supervision and Documentation:**
Students were involved in monitoring site works, preparing progress notes, and ensuring compliance with detailing norms.

4. Learning Outcomes

Upon completing the centre line layout and reinforcement detailing project, students achieved the following outcomes:

- **Understanding of Centre Line Marking:**
Students gained practical knowledge of interpreting structural drawings and accurately transferring dimensions to the ground, a critical step in the construction process.
- **Exposure to Reinforcement Detailing Practices:**
Students learned to identify different reinforcement components, interpret bar bending schedules, and understand placement techniques essential for structural stability.
- **Skill Development in Field Coordination:**
Students improved their ability to work in teams, coordinate with site engineers, and follow construction sequences efficiently.
- **Improved Interpretation of Construction Drawings:**
Through continuous reference to working drawings, students enhanced their ability to interpret technical details essential for execution.

5. Conclusion

The centre line layout and reinforcement detailing project was a highly enriching experience for the participating students. It provided an excellent opportunity to bridge the gap between classroom concepts and practical application. Students not only contributed to a significant university infrastructure project but also developed critical skills that are vital for their future professional careers.

Such real-time projects emphasize the importance of precision, planning, and teamwork in civil engineering practice and prepare students to excel in the construction industry.

